



# ECO Design: Energy Efficiency Indicator – CDM Compliance to IEC 61800-9-2: 2017

<b>Manufacturer:</b>		Parker Hannifin Manufacturing Germany GmbH & Co KG: Electric Motion & Pneumatic Division																																						
<b>Address:</b>		Robert-Bosch-Str. 22 - 77656 Offenburg (Germany)																																						
<b>Product Series:</b>		AC890 Series Variable Speed Drives																																						
<b>Rated Supply Voltage:</b>		3x 230Vac +/-10%																																						
<b>Rated Supply Frequency:</b>		50Hz / 60Hz +/-5%																																						
<b>Duty:</b>		Constant Torque														Quadratic Torque																								
<b>Temperature Rating:</b>		0 – 45°C														0 – 40°C																								
Product Code	$P_r$ (kW)	$I_{r, OUT}$ (A)	$S_{r, equ}$ (VA)	0.25		0.50		1.00		1.50		2.00		2.50		3.00		IE2 Compliant	$P_r$ (kW)	$I_{r, OUT}$ (A)	$S_{r, equ}$ (VA)	0.25		0.50		1.00		1.50		2.00		2.50		IE2 Compliant	$P_{L, control standby}$ (W)					
				$P_{L, CDM}$ (W)	$p_{L, CDM}$ (%)	$P_{L, CDM}$ (W)	$p_{L, CDM}$ (%)	$P_{L, CDM}$ (W)	$p_{L, CDM}$ (%)	$P_{L, CDM}$ (W)	$p_{L, CDM}$ (%)	$P_{L, CDM}$ (W)	$p_{L, CDM}$ (%)	$P_{L, CDM}$ (W)	$p_{L, CDM}$ (%)	$P_{L, CDM}$ (W)	$p_{L, CDM}$ (%)					$P_{L, CDM}$ (W)	$p_{L, CDM}$ (%)	$P_{L, CDM}$ (W)	$p_{L, CDM}$ (%)	$P_{L, CDM}$ (W)	$p_{L, CDM}$ (%)													
890SD-231300B0-Bxx-xxxxx	0.55	3	1195	57.8	4.84	59.1	4.94	58.2	4.87	60.3	5.05	62.4	5.22	62.4	5.22	66.5	5.57	71.2	5.95	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
890SD-231550B0-Bxx-xxxxx	1.1	5.5	2191	63.8	2.91	65.9	3.01	69.0	3.15	73.5	3.35	78.2	3.57	82.3	3.76	91.9	4.19	103.5	4.72	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
890SD-231700B0-Bxx-xxxxx	1.5	7	2789	71.0	2.55	73.9	2.65	77.7	2.79	83.9	3.01	90.4	3.24	94.6	3.39	108.2	3.88	124.4	4.46	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
890SD-232110B0-Bxx-xxxxx	2.2	11	4382	71.1	1.62	75.3	1.72	78.4	1.79	87.4	1.99	96.7	2.21	96.7	2.21	116.0	2.65	139.0	3.17	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
890SD-232165B0-Bxx-xxxxx	4	16.5	6573	88.5	1.35	95.5	1.45	101.1	1.54	116.2	1.77	132.6	2.02	133.1	2.02	166.9	2.54	208.6	3.17	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
890SD-232240C0-Bxx-xxxxx	5.5	24	9561	108.1	1.13	114.8	1.20	129.8	1.36	144.3	1.51	160.0	1.67	200.0	2.09	235.6	2.46	280.1	2.93	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
890SD-232300C0-Bxx-xxxxx	7.5	30	11951	122.1	1.02	130.9	1.10	150.6	1.26	170.1	1.42	192.4	1.61	243.3	2.04	292.5	2.45	358.5	3.00	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15

**Table Abbreviations:**

- $P_r$  = Rated drive power (expressed in kiloWatts)
- $I_{r, OUT}$  = Rated drive output current (expressed in Amps)
- $S_{r, equ}$  = Rated apparent drive output power (expressed in Volt-Amperes)
- $P_{L, CDM (X,Y)}$  = absolute power losses, CDM associated, in operating condition (X, Y), where X = Motor stator frequency (%) and Y = Torque producing current (%), (expressed in Watts)
- $p_{L, CDM (X,Y)}$  = relative power losses, CDM associated, in operating condition (X, Y), where X = Motor stator frequency (%) and Y = Torque producing current (%), (expressed as a Percentage)
- $P_{L, control standby}$  = Power losses, control board associated, when CDM is in standby mode (expressed in Watts)

**Notes:**

- All calculations performed at nominal 230V, 50Hz supply, using the default switching frequency of the drive rating. See Product Manual HA468445U004 for values.
- Products do not have a Quadratic Torque rating.



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Rated Supply Voltage:	3x 380 – 460Vac +/-10%																																								
Rated Supply Frequency:	50Hz / 60Hz +/-5%																																								
Duty:	Constant Torque															Quadratic Torque																									
Temperature Rating:	0 – 45°C															0 – 40°C																									
Product Code	$P_r$ (kW)	$I_{r,OUT}$ (A)	$S_{r,eqv}$ (VA)	$P_{L,CDM(0.25)}$ (W)	$p_{L,CDM(0.25)}$ (%)	$P_{L,CDM(50.25)}$ (W)	$p_{L,CDM(50.25)}$ (%)	$P_{L,CDM(90.50)}$ (W)	$p_{L,CDM(90.50)}$ (%)	$P_{L,CDM(90.100)}$ (W)	$p_{L,CDM(90.100)}$ (%)	$P_{L,CDM(90.100)}$ (W)	$p_{L,CDM(90.100)}$ (%)	$P_{L,CDM(90.100)}$ (W)	$p_{L,CDM(90.100)}$ (%)	$P_{L,CDM(90.100)}$ (W)	$p_{L,CDM(90.100)}$ (%)	$P_{L,CDM(90.100)}$ (W)	$p_{L,CDM(90.100)}$ (%)	$P_r$ (kW)	$I_{r,OUT}$ (A)	$S_{r,eqv}$ (VA)	$P_{L,CDM(0.25)}$ (W)	$p_{L,CDM(0.25)}$ (%)	$P_{L,CDM(50.25)}$ (W)	$p_{L,CDM(50.25)}$ (%)	$P_{L,CDM(90.50)}$ (W)	$p_{L,CDM(90.50)}$ (%)	$P_{L,CDM(90.100)}$ (W)	$p_{L,CDM(90.100)}$ (%)	$P_{L,CDM(90.100)}$ (W)	$p_{L,CDM(90.100)}$ (%)	IE2 Compliant	$P_{L,control\ standby}$ (W)							
890SD-432730E0-Bxx-xxxxx	37	73	50576	333.1	0.66	336.5	0.67	413.4	0.82	451.4	0.89	490.5	0.97	715.4	1.41	792.1	1.57	890.5	1.76	✓	45	87	60275	355.2	0.59	380.8	0.63	474.6	0.79	570.8	0.95	687.9	1.14	848.6	1.41	941.6	1.56	1069.1	1.77	✓	15
890SD-432870E0-Bxx-xxxxx	45	87	60275	354.7	0.59	381.5	0.63	471.0	0.78	571.0	0.95	690.2	1.15	833.1	1.38	930.3	1.54	1059.8	1.76	✓	55	105	72746	407.5	0.56	440.0	0.60	551.4	0.76	674.3	0.93	825.7	1.14	1004.4	1.38	1122.6	1.54	1287.3	1.77	✓	15
890SD-433105Fx-Bxx-xxxxx	55	105	72746	473.0	0.65	505.8	0.70	597	0.82	727.3	1.00	874.9	1.20	979.3	1.35	1138.5	1.56	1322.9	1.82	✓	75	145	100459	565.5	0.56	612.0	0.61	738.4	0.74	930.6	0.93	1160.0	1.15	1281.5	1.28	1517.9	1.51	1807.1	1.80	✓	15
890SD-433145Fx-Bxx-xxxxx	75	145	100459	554.3	0.55	598.8	0.60	719.7	0.72	896.1	0.89	1094.0	1.09	1235.2	1.23	1450.8	1.44	1698.4	1.69	✓	90	165	114315	599.7	0.52	651.8	0.57	788.0	0.69	998.4	0.87	1240.8	1.09	1376.9	1.20	1634.9	1.43	1939.3	1.70	✓	15
890SD-433156Fx-Bxx-xxxxx	90	180	124708	625.1	0.50	678.6	0.54	819.8	0.66	1034.7	0.83	1280.8	1.03	1418.1	1.14	1682.1	1.35	1991.2	1.60	✓	110	205	142028	699.5	0.49	761.8	0.54	927.9	0.65	1182.7	0.83	1483.6	1.04	1629.8	1.15	1941.2	1.37	2318.6	1.63	✓	15
890SD-433216Gx-xxx-xxxxx	110	216	149649	977.4	0.65	1039.2	0.69	1206.3	0.81	1449.0	0.97	1721.5	1.15	1922.9	1.28	2214.9	1.48	2551.8	1.71	✓	132	260	180133	1082.5	0.60	1159.0	0.64	1369.0	0.76	1675.7	0.93	2026.0	1.12	2281.5	1.27	2656.8	1.47	3095.6	1.72	✓	35
890SD-433250Gx-xxx-xxxxx	132	250	173205	1158.6	0.67	1229.7	0.71	1444.9	0.83	1727.9	1.00	2050.0	1.18	2308.5	1.33	2652.2	1.53	3053.6	1.76	✓	150	302	209232	1251.9	0.60	1338.8	0.64	1593.7	0.76	1948.8	0.93	2369.1	1.13	2644.8	1.26	3076.9	1.47	3602.5	1.72	✓	35
890SD-433316Gx-xxx-xxxxx	160	316	218931	1512.5	0.69	1601.0	0.73	1873.5	0.86	2215.1	1.01	2584.6	1.18	2989.1	1.37	3403.0	1.55	3861.3	1.76	✓	180	361	250108	1526.6	0.61	1626.3	0.65	1955.8	0.78	2168.1	0.87	2379.2	0.95	3294.1	1.32	3786.5	1.51	4344.0	1.74	✓	35
890SD-433361Gx-xxx-xxxxx	180	361	250108	1523.4	0.61	1622.0	0.65	1933.7	0.77	2143.8	0.86	2352.6	0.94	3179.8	1.27	3667.0	1.47	4218.8	1.69	✓	220	420	290985	1642.7	0.56	1759.3	0.60	2127.0	0.73	2378.1	0.82	2634.0	0.91	3621.7	1.24	4214.8	1.45	4907.3	1.69	✓	35
890SD-433375Hx-xxx-xxxxx	200	375	259808	1651.8	0.64	1754.8	0.68	2085.0	0.80	2305.6	0.89	2526.9	0.97	3408.0	1.31	3923.4	1.51	4513.8	1.74	✓	250	480	332554	1859.9	0.56	1994.8	0.60	2422.5	0.73	2715.5	0.82	3018.6	0.91	4181.6	1.26	4882.3	1.47	5715.6	1.72	✓	35
890SD-433420Hx-xxx-xxxxx	220	420	290985	1732.7	0.60	1849.1	0.64	2217.0	0.76	2467.7	0.85	2722.5	0.94	3711.7	1.28	4302.9	1.48	4991.3	1.72	✓	250	480	332554	1859.9	0.56	1994.8	0.60	2422.5	0.73	2715.5	0.82	3018.6	0.91	4181.6	1.26	4882.3	1.47	5715.6	1.72	✓	35
890SD-433480Hx-xxx-xxxxx	250	480	332554	1859.6	0.56	1999.3	0.60	2410.1	0.72	2691.0	0.81	2976.7	0.90	4048.0	1.22	4718.2	1.42	5496.6	1.65	✓	300	545	377587	1991.9	0.53	2141.3	0.57	2607.5	0.69	2934.2	0.78	3274.7	0.87	4496.3	1.19	5288.0	1.40	6235.3	1.65	✓	35
890SD-433520Hx-xxx-xxxxx	280	520	360267	1943.6	0.54	2085.1	0.58	2527.3	0.70	2835.7	0.79	3154.4	0.88	4305.5	1.20	5047.8	1.40	5927.5	1.65	✓	315	590	408764	2079.9	0.51	2243.5	0.55	2749.4	0.67	3109.1	0.76	3486.4	0.85	4818.5	1.18	5698.2	1.39	6757.3	1.65	✓	35
890SD-433590Jx-xxx-xxxxx	315	590	408764	2079.9	0.51	2243.7	0.55	2749.4	0.67	3109.0	0.76	3488.9	0.85	4818.5	1.18	5701.3	1.39	6767.1	1.66	✓	355	650	450333	2207.4	0.49	2390.0	0.53	2953.6	0.66	3358.8	0.75	3792.7	0.84	5279.1	1.17	6283.0	1.40	7521.4	1.67	✓	35

**Table Abbreviations:**

- $P_r$  = Rated drive power (expressed in kiloWatts)
- $I_{r,OUT}$  = Rated drive output current (expressed in Amps)
- $S_{r,eqv}$  = Rated apparent drive output power (expressed in Volt-Amperes)
- $P_{L,CDM(X,Y)}$  = absolute power losses, CDM associated, in operating condition (X, Y), where X = Motor stator frequency (%) and Y = Torque producing current (%), (expressed in Watts)
- $p_{L,CDM(X,Y)}$  = relative power losses, CDM associated, in operating condition (X, Y), where X = Motor stator frequency (%) and Y = Torque producing current (%), (expressed as a Percentage)
- $P_{L,control\ standby}$  = Power losses, control board associated, when CDM is in standby mode (expressed in Watts)

**Notes:**

- All calculations performed at nominal 400V, 50Hz supply, using the default switching frequency of the drive rating. See Product Manuals HA469315U004 & HA471397U003 for values.

